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Reply to 12 January 2006 Office Action

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REMARKS

This paper is responsive to any paper(s) indicated above, and is responsive in any other manner indicated below.

STATEMENT OF SUBSTANCE

This paper is responsive to the examiner interview conducted on even date herewith, by and between (as indicated on the Interview Summary document) Primary Examiner Marianne L. Padgett and attorney Paul J. Skwierawski. More particularly, any foregoing amendments may include amendments discussed during, or resultant from, the examiner interview, and the following includes a reiteration of discussions/arguments had during the examiner interview.

PENDING CLAIMS

Claims 1-18 and 36-46 were pending in the application and subject to examination at the time of the Office Action. Unrelated to any prior art, scope or rejection, appropriate claims have been amended to adjust a clarity and/or focus of Applicant's claimed invention. That is, such amendments are unrelated to any prior art or scope adjustment, and are simply clarified claims in which Applicant is presently interested. At entry of this paper, Claims 1-18 and 36-46 remain pending in the application for further examination.

REJECTION UNDER '112, 2ND PAR. OBVIATED VIA CLAIM AMENDMENT

Claims 1-18 have been rejected under 35 USC '112, 2nd paragraph, as being indefinite for the concerns listed within the section numbered "1" beginning on page

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2 of the Office Action. Appropriate ones of such claims have been carefully reviewed and carefully amended where appropriate as discussed in the Examiner interview, in order to address the Office Action listed concerns. As indicated by the Examiner during the examiner interview, such amendments are believed to overcome the 112, 2nd para. rejection. As the foregoing is believed to have addressed all '112 2nd paragraph concerns, reconsideration and withdrawal of the '112 2nd paragraph rejection are respectfully requested.

35 USC '112, 1ST PARAGRAPH REJECTION - TRAVERSED

Claims 1-18 have been rejected under 35 USC '112, 1st paragraph, for the concerns listed within the section numbered "2" beginning on page 3 of the Office Action. Appropriate ones of such claims have been carefully reviewed and carefully amended where appropriate as discussed in the Examiner interview, in order to address the Office Action listed concerns. As indicated by the Examiner during the examiner interview, such amendments are believed to overcome the 112, 1st para. rejection. Significant support for part of Applicant's claims may be found in Applicant's specification page 30, last three lines, through page 31, first paragraph. As the foregoing is believed to have addressed all '112 1st paragraph concerns, reconsideration and withdrawal of the '112 1st paragraph rejection are respectfully requested.

REJECTION UNDER 35 USC §103 - TRAVERSED

The 35 USC §103 rejection of Claims 1-18 as being unpatentable over Nakano *et al.* (JP 11-330053) and Bennett *et al.* (JP 03-147317/US 5,367,139 A) in

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view of Katsuyama *et al.* (JP 11-340196) is respectfully traversed. Such rejection has been rendered obsolete by the present clarifying amendments to Applicant's claims, and accordingly, traversal arguments are not appropriate at this time. However, Applicant respectfully submits the following to preclude renewal of any such rejections against Applicant's clarified claims.

All descriptions of Applicants disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed.

In rejecting claims under 35 USC §103, the Examiner bears the initial burden of presenting a *prima facie* case of obviousness. See *In re Rijckaert*, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). To reach a conclusion of obviousness under §103, the Examiner must produce a factual basis supported by teaching in a prior art reference or shown to be common knowledge of unquestionable demonstration. Such evidence is required to establish a *prima facie* case. *In re Piasecki*, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787-88 (Fed. Cir. 1984). The Examiner must not only identify the elements in the prior art, but also show "some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead the individual to combine the relevant teachings of the references." *In re Fine*, 837 F.2d 1071, 1074, 5 USPQ2d 1596 (Fed. Cir. 1988). What a reference teaches is a question of fact. *In re Baird*, 16 F.3d 380, 382, 29 USPQ2d 1550, 1552 (Fed. Cir. 1994) (*citing In re Beattie*, 974 F.2d 1309, 1311, 24 USPQ2d 1040, 1041 (Fed. Cir. 1992)). (*In re Baird* addresses the

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substitution of a claim limitation by an element that is alleged to be the same or to operate the same; "the requirements of the claim cannot be ignored or substituted.")

However, the cited prior art does not adequately support a §103 obviousness-type rejection because it does not, at minimum, disclose (or suggest) the following features/limitations.

More particularly, ones of the features of the present invention which are not described nor suggested in the cited prior art is referring to a data base in obtaining information on a state of contamination of the inside wall of the processing chamber. The database contains information of relationships between signals obtained by the detection of light reflected from the inside wall and states of contamination of the inside wall. That is, it is a database having multiple entries where respective detection signals are corresponded with respective states of contamination.

In terms of (at minimum) distinguishing claim language, independent claim 1, for example, states: "a signal processing operation for obtaining information on a state of contamination of the inside wall of the processing chamber, by processing the wall-reflected light signal obtained at the detection operation, by referring to an electronic database storing predetermined relationships between candidate signals obtainable from said detection of light from said inside wall and corresponding states of inside-wall contamination, to derive a state of contamination corresponding to the wall-reflected light signal, from the electronic database." Other ones of Applicant's claims contain similar or analogous features/limitations.

Turning now to rebuttal of the applied references, Nakano (JP-11-330053-A) actually teaches AWAY from Applicant's disclosed and claimed invention. More

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particularly, Nakano is directed solely toward detecting "foreign matter which is floated in the plasma". In all Nakano embodiments, Nakano appears to characterize any signal from wall-reflected light as undesired noise. Nakano's embodiments avoid use of the signal from wall-reflected light, i.e., by "optically eliminating", "subtracting", or otherwise avoiding or removing such signal. In any event, Nakano nowhere discloses use of **"an electronic database storing predetermined relationships between candidate signals obtainable from said detection of light from said inside wall and corresponding states of inside-wall contamination."**

Bennett *et al.* (US 5,367,139) discloses generally that light scattering within a reactor (i.e., chamber) may be used to measure contamination within the chamber, but a mainstay of Bennett *et al.* is directed toward floating contaminant particles within the plasma. Bennett *et al.* does disclose column 10, lines 54-63, that cleanliness of a "tool" may be determined. But nowhere does Bennett *et al.* disclose detection of side wall contamination, or disclose use of **"an electronic database storing predetermined relationships between candidate signals obtainable from said detection of light from said inside wall and corresponding states of inside-wall contamination."**

Finally, Katsuyama *et al.* (JP-11-340196-A) does teach that sidewall and floating contamination can be detected with scattered light, but Katsuyama *et al.* appears mainly directed to subtracting out static sidewall contamination signal portions (i.e., sidewall contamination does not move over time), to deal only with the dynamic (i.e., moving) floating contamination particles. In any event, Katsuyama *et al.* nowhere discloses use of **"an electronic database storing predetermined**

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relationships between candidate signals obtainable from said detection of light from said inside wall and corresponding states of inside-wall contamination."

Given that all three applied references are mutually deficient in nowhere disclosing use of "**an electronic database storing predetermined relationships between candidate signals obtainable from said detection of light from said inside wall and corresponding states of inside-wall contamination**", it is respectfully submitted that no combination of the applied reference would have resulted in or suggested, Applicant's disclosed and claimed invention.

As a result of all of the foregoing, it is respectfully submitted that the applied art would not support either a §103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §103 rejection, and express written allowance of all of the rejected claims, are respectfully requested.

RESERVATION OF RIGHTS

It is respectfully submitted that any and all claim amendments and/or cancellations submitted within this paper and throughout prosecution of the present application are without prejudice or disclaimer of any scope or subject matter. Further, Applicant respectfully reserves all rights to file subsequent related application(s) (including reissue applications) directed to any/all previously claimed limitations/features which have been subsequently amended or cancelled, or to any/all limitations/features not yet claimed, *i.e.*, Applicant continues (indefinitely) to maintain no intention or desire to dedicate or surrender any limitations/features of subject matter of the present application to the public.

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EXAMINER INVITED TO TELEPHONE

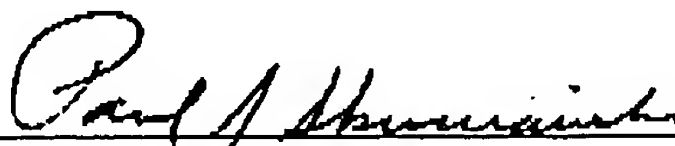
The Examiner is invited to telephone the undersigned at the local D.C. area number 703-312-6600, to discuss an Examiner's Amendment or other suggested action for accelerating prosecution and moving the present application to allowance.

CONCLUSION

In view of the foregoing amendments and remarks, Applicant respectfully submits that the claims listed above as presently being under consideration in the application are in condition for allowance. Accordingly, early allowance of such claims is respectfully requested.

To whatever other extent is actually necessary, Applicant respectfully petitions the Commissioner for an extension under 37 CFR §1.136. Please charge any actual deficiency in fees required for entry of this paper to ATS&K Deposit Account No. 01-2135 (as Case No. 501.41175X00).

Respectfully submitted,



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